II. AMENDENT

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Claims 1-27 (Canceled)

28. (Original) A method for forming a support bound PNA dimer, said method comprising:
    a) coupling a first PNA monomer to a sterically hindered solid support comprising a sterically hindered acid forming cleavable linker wherein the PNA monomer comprises a N-terminal amine base labile protecting group;
    b) optionally washing the solid support to remove excess first PNA monomer;
    c) treating the solid support for a period of about 1 to about 2 minutes with a deprotection reagent that substantially removes the base labile N-terminal amine protecting group from the support bound first PNA monomer but that does not allow for more than 50 percent cyclization and elimination of the first PNA monomer from the support;
    d) washing the solid support to remove the deprotection reagent; and
    e) coupling a second PNA monomer to the N-terminal amine of the first PNA monomer as soon as is practical after performing steps (c) and (d).

Claims 29-40 (Canceled)

41. (Original) A method for forming a support bound PNA dimer, said method comprising:
    a) coupling a first PNA monomer to solid support comprising an acid forming cleavable linker wherein the PNA monomer comprises an acid labile N-terminal protecting group;
    b) optionally washing the solid support to remove excess first PNA monomer;
    c) treating the solid support with a deprotection reagent under acidic conditions that deprotect the acid labile N-terminal protecting group;
    d) washing the solid support to remove the deprotection reagent; and

e) coupling a second PNA monomer to the N-terminal amine of the first PNA monomer,

wherein the final loading of the PNA dimer on the solid support is greater than or equal to 0.08 mmol per gram.

Claims 42-74 (Canceled)

75. (New) The method of claim 28, wherein the first and second PNA monomers are Fmoc(Bhoc) PNA monomers comprising the same or a different nucleobase.

76. (New) The method of claim 75, wherein the nucleobase of the first and second PNA monomer is independently selected from the group consisting of: adenine, cytosine, guanine, thymine, uracil, 5-propynyl-uracil, 2-thio-5-propynyl-uracil, 5-methylcytosine, pseudoisocytosine, 2-thiouracil and 2-thiothymine, 2-aminopurine, N9-(2-amino-6-chloropurine), N9-(2,6-diaminopurine), hypoxanthine, N9-(7-deaza-guanine), N9-(7-deaza-8-aza-guanine) and N8-(7-deaza-8-aza-adenine).

77. (New) The method of claim 28, wherein the N-terminal base labile protecting group is Fmoc.

78. (New) The method of claim 28, wherein the deprotection reagent is a solution containing from about 15 to about 25 percent piperidine in an organic solvent.

79. (New) The method of claim 78, wherein the deprotection reagent is 20 percent piperidine in N,N'-dimethlyformamide (DMF).

80. (New) The method of claim 28, wherein the deprotection reagent is a solution containing from about 0.2% to about 4% (v/v) DBU in NMP.

81. (New) The method of claim 80, wherein the deprotection reagent is about 2% DBU in NMP.

82. (New) The method of claim 28, wherein the sterically hindered solid support is selected from the group consisting of: Trityl chloride resin (Trityl-Cl), 2-Chlorotrityl chloride resin, DHPP, MBHA, 4-methyltrityl chloride resin, 4-methoxytrityl chloride

resin, Hydroxy-(2-chorophenyl)methyl-PS, Rink Acid Resin and NovaSyn TGT alcohol resin.

83. (New) The method of claim 28, wherein the sterically hindered solid support is Trityl chloride (Trityl-Cl) resin.

84. (New) The method of claim 28, wherein the final loading of the PNA dimer on the solid support is greater than or equal to 0.08 mmol per gram.

85. (New) The method of claim 28, wherein the final loading of the PNA dimer on the solid support is in the range from about 0.1 mmol per gram to about 1 mmol per gram.

86. (New) The method of claim 28, wherein the final loading of the PNA dimer on the solid support is in the range from about 0.12 mmol per gram to about 0.35 mmol per gram.

87. (New) The method of claim 41, wherein the first and second PNA monomers are t-boc/Z protected PNA monomers comprising the same or a different nucleobase.

88. (New) The method of claim 41, wherein the first and second PNA monomers are Mmt/Bhoc protected PNA monomers comprising the same or a different nucleobase.

89. (New) The method of claim 41, wherein the first PNA monomer is an Mmt/Bhoc protected PNA monomer and the second PNA monomer is an Fmoc/Bhoc protected PNA monomer.

90. (New) The method of claim 41, wherein the nucleobase of the first and second PNA monomer is independently selected from the group consisting of: adenine, cytosine, guanine, thymine, uracil, 5-propynyl-uracil, 2-thio-5-propynyl-uracil, 5-methylcytosine, pseudoisocytosine, 2-thiouracil and 2-thiothymine, 2-aminopurine, N9-(2-amino-6-chloropurine), N9-(2,6-diaminopurine), hypoxanthine, N9-(7-deaza-guanine), N9-(7-deaza-8-aza-guanine) and N8-(7-deaza-8-aza-adenine).

91. (New) The method of claim 41, wherein the first PNA monomer is an Mmt/Bhoc protected PNA monomer and the deprotection reagent is a solution containing from about 1 to about 5 percent (v/v) dicloroacetic acid in an organic solvent.

92. (New) The method of claim 91, wherein the deprotection reagent is about 2 percent dichloroacetic acid in dichloromethane (DCM).

93. (New) The method of claim 41, wherein the solid support is a sterically hindered solid support is selected from the group consisting of: Trityl chloride resin (Trityl-Cl), 2-Chlorotrityl chloride resin, DHPP, MBHA, 4-methyltrityl chloride resin, 4-methoxytrityl chloride resin, Hydroxy-(2-chorophenyl)methyl-PS, Rink Acid Resin and NovaSyn TGT alcohol resin.

94. (New) The method of claim 41, wherein the solid support is selected from the group consisting of: Fmoc-PAL-PEG-PS, NovaSyn TGA and Wang Resin.

95. (New) The method of claim 41, wherein the final loading of the PNA dimer on the solid support is in the range from about 0.1 mmol per gram to about 1.2 mmol per gram.

96. (New) The method of claim 41, wherein the final loading of the PNA dimer on the solid support is in the range from about 0.12 mmol per gram to about 0.35 mmol per gram.